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ABSTRACT

The purpose of this study was to ascertain if preservice elementary teachers could exhibit an increase in businesslike behavior in their classroom interactions with pupils without negatively affecting teacher warmth, after undergoing a training intervention focused specifically on businesslike behavior. Previous studies indicated a positive correlation between such behavior and student achievement. It was hypothesized that businesslike teacher behavior would not result in a decrease in the level of teacher warmth, and could possibly produce an increase. The subjects of this study participated in a training program planned to develop four behaviors: (1) seriousness; (2) deliberateness; (3) goal orientedness; and (4) organization. Following this program, the participants were observed to determine what effect such training had upon their personal characteristics of warmth and friendly interaction with students. The data demonstrated that it is possible to train preservice teachers to increase their observable level of businesslike teaching behavior, and that an increase in this behavior has no observable adverse effect on the level of teacher warmth. (JD)

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THE INFLUENCE OF A TRAINING INTERVENTION FOR BUSINESS-LIKE BEHAVIOR ON THE BUSINESS-LIKE BEHAVIOR AND LEVEL OF WARMTH OF PRESERVICE ELEMENTARY TEACHERS

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Purpose

The purpose of this study was to ascertain if preservice elementary teachers would exhibit an increase in business-like behavior in their classroom interactions with pupils without negatively affecting teacher warmth after undergoing a training intervention focused specifically on business-like behavior.

The study sought to determine the effects of the intervention and the persistence of the effects over a ten week post training period. To this end it was necessary to a) formulate the descriptors of business-like behavior, b) develop and implement the training intervention for business-like behavior, and c) monitor the observable levels of business-like behavior and warmth throughout the pre-posttests.

Research Relating Student Achievement and Business-Like Teacher Behavior as Defined in This Study

In reviewing the history of teacher effectiveness research, contemporary researchers in teacher education are forced to admit that too little is known about the factors related to teacher effectiveness (Barr, 1961; Gage, 1963; Rosenshine, 1971; Travers, 1973; Medley, Soar & Soar, 1975; Rosenshine, 1976; Berliner, 1976)

Ryans' (1960) Teacher Characteristics Study sought to address the lack of any clear understanding of teacher behavior patterns.

Hence, Ryans undertook an extensive study during the decade of the nineteen fifties to study objectively teacher behavior patterns. This work, while not primarily concerned with teacher effectiveness, was a pioneer study in analyzing teacher behavior and clearing the way for future studies on effectiveness. Ryans (1960) identified three distinct patterns of teacher characteristics, namely: Pattern X--friendly, understanding, and sympathetic; Pattern Y--responsible, business-like, systematic; Pattern Z--stimulating, imaginative, surgent.

While Ryans was interested primarily in the identification of patterns of behavior irrespective of student achievement, he did find that Pattern Y teacher behavior was highly correlated with desirable pupil behavior in teacher's classes.

In considering the literature of student achievement and teacher behavior, the review by Rosenshine (1971) consitutes:

> ...the most solid body of evidence for consistently demonstrating that teacher behavior is related to measures of student achievement. (Kennedy & Bush, 1976, p. 15)

While the total number of studies reviewed was approximately fifty, only seven of these studies related to business-like behavior the specific subject of the training intervention developed in this study.

Six of the seven studies related to business-like behavior reported by Rosenshine (1971) contained significant results relating

teacher business-like behavior and student achievement.

Relationship Between Teacher Warmth and Student Achievement and Business-like Teacher Behavior

While the specific training intervention developed in this study does not relate to teacher warmth, the variable was monitored in terms of a possible relationship between increases in business-like behavior and the changes in teacher warmth. Several reasons are offered for the researcher's interest in observing the variable of teacher warmth.

First, it would appear that a popular impression and general perception of practitioners is that to be business-like means that one is cold, calculating, uncaring, and controlling, and therefore anything but warm. The research indicates that such a relationship does not in fact have to exist, but hypothesizes that an increase in business-like teacher behavior in and of itself will not result in an observable decrease in the level of teacher warmth.

The researcher received rather strong support for this viewpoint from the work of David G. Ryans (1960). Ryans' Pattern X (warmth) and Y (business-like) were shown to be highly intercorrelated among elementary teachers and each Pattern was found to be highly correlated with desired pupil behavior in the classroom (Ryans, 1960). The high degree of intercorrelation would suggest that, contrary to popular perceptions, increases in business-like teacher behavior could possibly produce an increase in the level of teacher warmth.

Finally, a rather strong body of research evidence exists to support the hypothesis that teacher warmth is positively correlated to student achievement gains (Rosenshine, 1971).

Descriptive Definition of "Business-Like Behavior"

The specific descriptors used to define and measure the variable of business-like behavior are four: 1) seriousness, 2) deliberateness, 3) goal orientedness, 4) organization. These descriptors were derived from the literature, especially Ryans' Teacher Characteristics Study (Ryans, 1960) earlier studies relating business-like behavior and student achievement, and the expert opinion of recognized teacher educators.

Seriousness includes such attributes as earnestness, genuineness, and sobriety as expressed in the rational execution of the task; efficient and judicious use of time; concise, befitting verbal and nonverbal language; precise, purposeful and confident deportment; thorough, scholarly treatment of the content; buoyancy without levity; and natural humor devoid of frivolity, cynicism, and/or sarcasm.

Deliberateness includes such attributes as purposefulness, willfulness, and thoughtfulness as expressed in the intentional execution of the task; measured and efficient use of time; intentional and precise use of verbal and nonverbal language; unambiguous, conscious, confident, deportment; concise, thoughtful and predetermined use of content. It is characterized by thoroughness but

not dullness, purposefulness and determinedness, but not inflexibleness, by exactness but not "pickyness", predetermined but not unresponsive. Deliberate teaching evidences intentional, logical and/or chronological sequencing; thoughtful and intentional involvement of all students; and planned transitions from introduction to closure of lessons.

Goal orientedness refers to the teacher's singlemindedness of purpose as evidenced by such behaviors as clear, precise, unambiguous goal statements in the introduction of the lesson, unwavering, decisive movement toward the goal in an efficient and systematic manner. It includes clear, well-developed follow-through activities unequivocally and consistently related to the goal, precise use of student input to facilitate attainment of objectives, and low incidence of vacillating or aimless approaches/comments/questions or behaviors.

Organization refers to the manner in which the means to goal attainment are orchestrated and how one uses organization as a supporting mechanism for goal attainment. Evidence of this descriptor includes such things as the preordering of facilities, ready availability of instructional materials, and well developed, systematic lessons that are related to the achievement of a specific purpose and to goal attainment. Organization includes such things as consistent, planned use of space and facilities to complement activities, materials well-prepared and readily available in advance, proper timing and pacing of the lesson in light of goals, efficient

and appropriate involvement of personnel in a planned and orderly manner, utilization of content to enchance goal attainment, as well as over-all planned, systematic, goal-related control over the classroom environment.

Descriptive Definition of "Warmth"

Warmth refers to the extent to which the teacher manifests positive interpersonal relationships with the students, demonstrates sensitive and friendly behaviors, creates an atmosphere of acceptance of students and of sensitivity to their personal, academic and social needs and to the extent that he/she is open, friendly, accepting, compassionate, empathetic, concerned, positive, encouraging, supportive and loving, he or she is said to be warm. The teacher with warmth smiles easily, shows a healthy sense of humor, and uses physical contact as a positive reinforcement. These characteristics of teacher warmth are consistent with those used in the Rating Scale for Teacher Warmth from the Purdue Observer Rating Scales (1974).

Procedures and Methodology

The subjects of this study were twenty elementary education preservice teachers enrolled in a three-semester professional sequence. The three-semester professional sequence is part of a personalized, competence-oriented teacher education program which uses teaching centers as a vehicle for providing field experiences for undergraduate students. The teaching centers are contractual

partnership arrangements with schools to provide for both preservice and inservice education with a jointly appointed full-time coordinator who has faculty status in both institutions. This study was limited to preservice elementary teachers only and did not actively involve the inservice, cooperating teachers in the training or data collection.

The students had previously been involved in a four-hour per week tutoring experience in the semester prior to beginning their three-semester sequence. During the first semester of the professional sequence each of the preservice teachers had spent approximately three-fifths of his/her time in university instructional settings and two-fifths in a teaching center working in a classroom directly with teachers and students. The actual time in the field was from 8:30 a.m. to 3:30 p.m. for a semester of fifteen weeks.

At the time that the actual training in business-like behavior was conducted these preservice elementary teachers were in the second semester of the sequence which involved three full days per week for a semester in the teaching centers.

The students had progressed into the third semester of their professional sequence (which calls for five full days a week in the public schools for a full fifteen-week semester, similar to traditional student teaching) by the time that posttests II and III were conducted.

The training intervention took place as an elective minicourse within the undergraduate professional education program, but was

not a requirement. The delivery format for the training intervention was a minicourse which the twenty students elected to take. The students were aware that video-taping across two semesters would be required and that the class would be split into two groups. They were not told, however, of the purpose or focus of the research or of their assignment to either a control or experimental group.

The specific training intervention (seven weeks) for the Experimental Group included: 1) university classroom instruction in the descriptors of business-like behavior; 2) identification and observation of these descriptors in classroom settings; 3) role playing practice; 4) peer teaching; 5) microteaching.

Data were gathered on all students by video-taping a twenty-minute teaching episode in a regular classroom situation: a) just prior to the training intervention, b) immediately after the training period, c) five weeks after the training period ended, and d) ten weeks after the training period ended.

The Experimental Group was a randomly assigned group of elementary preservice teachers who were one-half of the second semester preservice teachers who voluntarily signed up for a mini-course that related to business-like behavior. The students assigned to the Experimental Group underwent a detailed training intervention specifically designed to increase their level of business-like teaching behavior. The Control Group was comprised of the remaining half of the preservice teachers electing to take the

mini-course. The Control Group also was unaware of the research design and received no specific training in business-like behavior. Random assignment of preservice teachers was achieved by utilizing the Random Table of Numbers.

Business-like behavior and teacher warmth constituted the dependent variables. The training intervention constituted the independent variable.

Statistical analyses were based on the differences between the means with a repeated measures design. More specifically, a two-factor mixed design, with repeated measures on one factor, analysis of variance was utilized.

The specific Analysis of Variance design was selected since it permitted not only a comparison of differences in the over-all performance of both Experimental and Control Groups but also a comparison within groups. This design was also used to determine if the variances were significant.

The test of simple effects was employed to study the level of significance of changes within treatment periods and the Tukey (a) was used to determine the level of significance of changes within groups between posttest.

In addition, coefficient alpha was employed in an effort to determine the consistency and reliability with which the business-like behavior descriptors were being rated during observations.

Product-Moment Coefficients of Correlation were calculated in an effort to determine the inter-correlations of the four descriptors defining business-like behavior. Since the four descriptors are being used to describe a single behavior, business-like, one might expect high intercorrelations; however, extremely high correlations normally would suggest refinements should be made in the descriptors of the behavior.

Means and standard deviations were used for a point of departure for discussion of the data and to graphically demonstrate the levels of performance of the Experimental and Control Groups.

The Spearman-Brown Prediction Formula was utilized (during the training of observers and during the rating of the observations) to determine a respectable interrater reliability (.90 or higher).

Due to the lack of evidence of interdependence between the variables of warmth and business-like behavior for the Experimental Group, no statistical analysis of the data regarding warmth was carried out.

Hypotheses

H_1: There will be a significant increase in the observable level of business-like behavior of the Experimental Group of preservice elementary teachers immediately after undergoing a training

intervention specifically designed to increase their level of business-like behavior.

H_2: There will be no significant increase in the observable level of business-like behavior of a Control Group not receiving training in business-like behavior.

H_3: There will be no significant decrease in the observable level of business-like behavior of the Experimental Group as measured immediately after undergoing training and five weeks after undergoing training.

H_4: There will be no significant decrease in the observable level of business-like behavior of the Experimental Group as measured immediately upon completion of the training and ten weeks thereafter.

H_5: The Experimental Group will display no significant decrease in their observable level of warmth in the classroom, having undergone a treatment designed to increase their observable level of business-like behavior.

Differences Between Control and Experimental Groups Regarding Business-like Behavior

The Experimental Group showed a marked increase in raw scores and mean scores as compared to the Control Group in relationship to Posttest I and Posttest III scores. In order to examine these data more clearly in terms of the significance of the variance, a two factor mixed design with repeated measures, analysis of variance was utilized.

Based upon the data from this statistical analysis, the following observations may be made: 1) the Experimental Group demonstrated an over-all significant increase in their level of business-like behavior. Thus H_1, that there will be a significant increase in the observable level of business-like behavior of the Experimental Group immediately after undergoing the training intervention, is accepted. 2) Subjects in both Groups changed their level of business-like behavior as a result of practice. 3) The amount of increase appeared to be related to the treatment.

The data demonstrate that the Experimental Group which began at a lower mean score level ($\bar{X}$ = 27.1) as compared to the Control Group ($\bar{X}$ = 28.6) increased dramatically in Posttest I, decreased in Posttest II and increased dramatically in Posttest III. A

similar, but not as dramatic a pattern was noteworthy for the Control Group.

A simple effects test was utilized to examine the data within the Experimental and Control Groups and the level of significance within treatment periods. A Tukey (a) pairwise comparison was used to examine the level of significance in the Experimental and Control Groups between observations.

Analysis of the data shows that there was no significant difference between Experimental and Control Groups on the Pretest and at Posttest II. Also, the data demonstrate a significant difference between Experimental and Control Groups at Posttest I and Posttest III.

Further analysis based upon Tukey (a) comparisons showed that there was no significant increase or decrease in the level of business-like behavior between Pretest and Posttest I or II or III or between the Posttests for the Control Group. Therefore, H_2, that there will be no significant increase in the observable level of business-like behavior of the Control Group not receiving training, is accepted.

For the Experimental Group significant differences ($< .05$) were found between Pretest and Posttest I and III, and between Posttest I and Posttest II, and Posttest II and Posttest III. Hence, Hypothesis 3, that there will be no significant decrease in the

observable level of business-like behavior for the Experimental Group as measured five weeks after treatment cannot be accepted.

Hypothesis 4, that there will be no significant decrease in the observable level of business-like behavior of the Experimental Group as measured upon completion of training and ten weeks after the training intervention is accepted.

Additional statistical analyses for each of the four descriptors support the overall data as reported.

Teacher Warmth

The raw data for each of the Subjects for the variable of teacher warmth was measured on the six point Purdue Observer Scale for Teacher Warmth.

In the absence of any observable consistent pattern of dependency between warmth and business-like behavior scores for the Experimental Group, Hypothesis 5, that the Experimental Group will display no significant decrease in their observable level of warmth having undergone a treatment designed to increase their observable level of business-like behavior, is accepted.

In summary, results of the analysis demonstrated that:

1) There was no significant difference in the levels of business-like behavior and warmth between Experimental and Control Groups at the time of the Pretest;

2) The Control Group did not show a significant increase ($< .05$) in its observable level of business-like behavior at the time of Posttest I;

3) The Experimental Group did show a significant increase ($<.05$) in their observable level of business-like behavior at the time of Posttest I;

4) This increase in business-like behavior for the Experimental Group persisted when measured ten weeks after training;

5) While the level of business-like behavior for the Experimental Group increased, the level of warmth remained consistant.

Conclusions and Future Implications

The data demonstrate that it is indeed possible to train preservice teachers to increase their observable level of business-like teaching behavior as described by seriousness, deliberateness, goal orientedness, and organization.

Furthermore the data suggest that an increase in business-like behavior need not have an adverse effect on the observable level of teacher warmth.

The data further suggest that the effects of the training intervention can be demonstrated to persist ten weeks after training. Since business-like behavior has a strong research base for being correlated with student achievement, the study has some implications for training programs, although replication for validation purposes is needed.

Future research in the area of teacher effectiveness might also use the training intervention to investigate further the relationship between business-like behavior of the teacher

and pupil achievement gains, as well as other variables such as content, student socioeconomic status, sex, and grade levels. Since the level of business-like behavior can now be measured, one might also be able to investigate the dimensions of business-like behavior in response to the question "How business-like do I need to be?"

Researchers may also wish to look at the elements of the training intervention in terms of their effectiveness independent of the total intervention, i.e., peer teaching, microteaching, and time of training. They may also investigate the discrete descriptors independently of each other, as well as whether pupils perceive what is described as business-like behavior in this study as a desirable aspect of teacher behavior.

The persistence of the behavior beyond the preservice level even into the first year of teaching and/or the need for periodic inservice to maintain the achieved level of performance may also be factors for future research.

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The study sought to determine the effects of the intervention and the persistence of the effects over a ten week post training period. To this end it was necessary to a) formulate the descriptors of business-like behavior, b) develop and implement the training intervention for business-like behavior, and c) monitor the observable levels of business-like behavior and warmth throughout the pre-posttests.

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Data were gathered on all students by video-taping a twenty-minute teaching episode in a regular classroom situation: a) just prior to the training intervention, b) immediately after the training period, c) five weeks after the training period ended, and d) ten weeks after the training period ended.

The Experimental Group was a randomly assigned group of elementary preservice teachers who were one-half of the second semester preservice teachers who voluntarily signed up for a mini-course that related to business-like behavior. The students assigned to the Experimental Group underwent a detailed training intervention specifically designed to increase their level of business-like teaching behavior. The Control Group was comprised of the remaining half of the preservice teachers electing to take the

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Business-like behavior and teacher warmth constituted the dependent variables. The training intervention constituted the independent variable.

Statistical analyses were based on the differences between the means with a repeated measures design. More specifically, a two-factor mixed design, with repeated measures on one factor, analysis of variance was utilized.

The specific Analysis of Variance design was selected since it permitted not only a comparison of differences in the over-all performance of both Experimental and Control Groups but also a comparison within groups. This design was also used to determine if the variances were significant.

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Product-Moment Coefficients of Correlation were calculated in an effort to determine the inter-correlations of the four descriptors defining business-like behavior. Since the four descriptors are being used to describe a single behavior, business-like, one might expect high intercorrelations; however, extremely high correlations normally would suggest refinements should be made in the descriptors of the behavior.

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The Spearman-Brown Prediction Formula was utilized (during the training of observers and during the rating of the observations) to determine a respectable interrater reliability (.90 or higher).

Due to the lack of evidence of interdependence between the variables of warmth and business-like behavior for the Experimental Group, no statistical analysis of the data regarding warmth was carried out.

Hypotheses

H_1: There will be a significant increase in the observable level of business-like behavior of the Experimental Group of preservice elementary teachers immediately after undergoing a training

intervention specifically designed to increase their level of business-like behavior.

H_2: There will be no significant increase in the observable level of business-like behavior of a Control Group not receiving training in business-like behavior.

H_3: There will be no significant decrease in the observable level of business-like behavior of the Experimental Group as measured immediately after undergoing training and five weeks after undergoing training.

H_4: There will be no significant decrease in the observable level of business-like behavior of the Experimental Group as measured immediately upon completion of the training and ten weeks thereafter.

H_5: The Experimental Group will display no significant decrease in their observable level of warmth in the classroom, having undergone a treatment designed to increase their observable level of business-like behavior.

Differences Between Control and Experimental Groups Regarding Business-like Behavior

The Experimental Group showed a marked increase in raw scores and mean scores as compared to the Control Group in relationship to Posttest I and Posttest III scores. In order to examine these data more clearly in terms of the significance of the variance, a two factor mixed design with repeated measures, analysis of variance was utilized.

Based upon the data from this statistical analysis, the following observations may be made: 1) the Experimental Group demonstrated an over-all significant increase in their level of business-like behavior. Thus H_1, that there will be a significant increase in the observable level of business-like behavior of the Experimental Group immediately after undergoing the training intervention, is accepted. 2) Subjects in both Groups changed their level of business-like behavior as a result of practice. 3) The amount of increase appeared to be related to the treatment.

The data demonstrate that the Experimental Group which began at a lower mean score level ($\bar{X} = 27.1$) as compared to the Control Group ($\bar{X} = 28.6$) increased dramatically in Posttest I, decreased in Posttest II and increased dramatically in Posttest III. A

similar, but not as dramatic a pattern was noteworthy for the Control Group.

A simple effects test was utilized to examine the data within the Experimental and Control Groups and the level of significance within treatment periods. A Tukey (a) pairwise comparison was used to examine the level of significance in the Experimental and Control Groups between observations.

Analysis of the data shows that there was no significant difference between Experimental and Control Groups on the Pretest and at Posttest II. Also, the data demonstrate a significant difference between Experimental and Control Groups at Posttest I and Posttest III.

Further analysis based upon Tukey (a) comparisons showed that there was no significant increase or decrease in the level of business-like behavior between Pretest and Posttest I or II or III or between the Posttests for the Control Group. Therefore, H_2, that there will be no significant increase in the observable level of business-like behavior of the Control Group not receiving training, is accepted.

For the Experimental Group significant differences ($< .05$) were found between Pretest and Posttest I and III, and between Posttest I and Posttest II, and Posttest II and Posttest III. Hence, Hypothesis 3, that there will be no significant decrease in the

observable level of business-like behavior for the Experimental Group as measured five weeks after treatment cannot be accepted.

Hypothesis 4, that there will be no significant decrease in the observable level of business-like behavior of the Experimental Group as measured upon completion of training and ten weeks after the training intervention is accepted.

Additional statistical analyses for each of the four descriptors support the overall data as reported.

Teacher Warmth

The raw data for each of the Subjects for the variable of teacher warmth was measured on the six point Purdue Observer Scale for Teacher Warmth.

In the absence of any observable consistent pattern of dependency between warmth and business-like behavior scores for the Experimental Group, Hypothesis 5, that the Experimental Group will display no significant decrease in their observable level of warmth having undergone a treatment designed to increase their observable level of business-like behavior, is accepted.

In summary, results of the analysis demonstrated that:

1) There was no significant difference in the levels of business-like behavior and warmth between Experimental and Control Groups at the time of the Pretest;

2) The Control Group did not show a significant increase ($< .05$) in its observable level of business-like behavior at the time of Posttest I;

3) The Experimental Group did show a significant increase (<.05) in their observable level of business-like behavior at the time of Posttest I;

4) This increase in business-like behavior for the Experimental Group persisted when measured ten weeks after training;

5) While the level of business-like behavior for the Experimental Group increased, the level of warmth remained consistant.

Conclusions and Future Implications

The data demonstrate that it is indeed possible to train preservice teachers to increase their observable level of business-like teaching behavior as described by seriousness, deliberateness, goal orientedness, and organization.

Furthermore the data suggest that an increase in business-like behavior need not have an adverse effect on the observable level of teacher warmth.

The data further suggest that the effects of the training intervention can be demonstrated to persist ten weeks after training. Since business-like behavior has a strong research base for being correlated with student achievement, the study has some implications for training programs, although replication for validation purposes is needed.

Future research in the area of teacher effectiveness might also use the training intervention to investigate further the relationship between business-like behavior of the teacher

and pupil achievement gains, as well as other variables such as content, student socioeconomic status, sex, and grade levels. Since the level of business-like behavior can now be measured, one might also be able to investigate the dimensions of business-like behavior in response to the question "How business-like do I need to be?"

Researchers may also wish to look at the elements of the training intervention in terms of their effectiveness independent of the total intervention, i.e., peer teaching, microteaching, and time of training. They may also investigate the discrete descriptors independently of each other, as well as whether pupils perceive what is described as business-like behavior in this study as a desirable aspect of teacher behavior.

The persistence of the behavior beyond the preservice level even into the first year of teaching and/or the need for periodic inservice to maintain the achieved level of performance may also be factors for future research.

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